REMARKS

Claims 1-16 have been examined on their merits.

The Examiner objects to claims 5-9 and 14-16 as being dependent upon a rejected base claim. Applicants thank the Examiner for indicating that claims 5-9 and 14-16 would be allowed if rewritten in independent form. Applicants have rewritten claims 5 and 14 in independent form, and submit that these claims are now allowable. Applicants further submit that claims 6-9, 15 and 16 are allowable as well, at least by virtue of their dependency from claims 5 and 14, respectively.

Applicants herein editorially amend claims 3-7, 9 and 12-16 for reasons of precision of language. The amendments to claims 3-7, 9 and 12-16 were made merely to more accurately claim the present invention and do not narrow the literal scope of the claims and thus do not implicate an estoppel in the application of the doctrine of equivalents. The amendments to claims 3-7, 9 and 12-16 were not made for reasons of patentability.

Claims 1-16 are all the claims presently pending in the application.

1.   Claims 1 and 10 stand rejected under 35 U.S.C. § 101 as allegedly being directed to non-statutory subject matter. Applicants traverse the rejection of claims 1 and 10 for at least the reasons discussed below.

The Federal Circuit, *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 47 U.S.P.Q.2d 1596, 1601 (Fed. Cir. 1998), held:

> [T]he transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price, constitutes a practical application of a mathematical algorithm, formula, or calculation, because it produces "a useful, concrete and tangible result" -- a final share price momentarily fixed for recording and reporting purposes and even accepted and relied upon by regulatory authorities and in subsequent trades.

Each independent claim of the present invention performs a series of routing calculations to determine a route between a source node and destination node in a network, which is a useful, concrete and tangible result. Critically, in *State Street*, the Federal Circuit did not require that the data processing system recited in claim 1 of U.S. Patent No. 5,193,056 include any additional means for processing or handling the final share price – the fact that the data processing system output the final share price was sufficient for claim 1 to be considered statutory subject matter under 35 U.S.C. § 101. Claims 1 and 10 now recite that the results of the route calculations are used to select a route between the source node and the destination node. Applying *State Street* to the amended claims, Applicants respectfully submit that claims 1 and 10 recite statutory subject matter under 35 U.S.C. § 101.

Furthermore, the Federal Circuit in *State Street* held that "[u]npatentable mathematical algorithms are identifiable by showing they are merely abstract ideas constituting disembodied concepts or truths that are not 'useful.' ... [T]o be patentable an algorithm must be applied in a 'useful' way." *State Street*, 47 U.S.P.Q.2d at 1601. Applicants respectfully submit that the pending claims recite "new and useful" patentable subject matter under §101, because claims 1 and 10 recite the performance of routing calculations between a source node and a destination

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node, and the selection of a route based on those calculations, which is a practical, useful result of the claimed invention. Thus, Applicants respectfully submit that the pending claims recite patentable subject matter under 35 U.S.C. § 101.

The Examiner alleges that the claims do not recite any clearly defined practical application of the claimed invention, and rejects the claims under 35 U.S.C. § 101 for allegedly merely solving a mathematical problem without limitation to a practical application. As noted above, *State Street* only require the claimed result to be new and useful, which has been done in the claimed invention as discussed above. There is no requirement in *State Street* that the invention perform some further action or processing with new and useful result. As noted above, the practical limitation of selection of a route based on the routing calculation has been met.

Thus, Applicants submit that claims 1 and 10 recite statutory subject matter under 35 U.S.C. § 101, and request that the 35 U.S.C. § 101 rejection against claims 1 and 10 be withdrawn.

2.   Claims 1-4 and 10-13 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Lee (U.S. Patent No. 6,122,283) in view of Gittins *et al.* (U.S. Patent No. 5,638,363). Applicants traverse the rejection of claims 1-4 and 10-13 at least for the reasons discussed below.

The Examiner acknowledges that Lee fails to explicitly disclose "performing at least two routing calculation [sic] for a maximum number of compression is of signal compressions and routing calculations comprising a first routing calculation for a number of links using signal

compression that is less than the maximum number, and a second routing calculation for the maximum number of links using signal compression obtained from the first routing calculation." *See* February 13, 2004 Non-Final Office Action, pgs. 3-4. The Examiner alleges that Gittens *et al.* provides the necessary disclosure to overcome the acknowledged deficiencies of Lee.

The combination of Lee and Gittens *et al.* fails to teach or suggest the routing calculations involving links that use signal compression and links that do not use signal compression as recited in claims 1 and 10. As discussed previously[1], the Examiner appears to be confusing the compression of *an entire network*, as disclosed by Lee, with a routing calculation that factors in if individual links use *signal compression* when the routing calculation is being performed, as recited in claims 1 and 10. Critically, the Examiner has not cited any passage in Lee that describes the links interconnecting the network nodes as using signal compression. The Examiner cited in any passage in Lee that describes a network having links that use signal compression <u>and</u> links that do not use signal compression. The Examiner has not cited any passage in Lee that describes determining network routes on the basis of whether the link uses compression or does not use signal compression. Moreover, the fact that Lee uses a Dijkstra methodology or a Floyd-Warshall methodology for compression of the network topology is immaterial. Lee uses those methodologies *to compress a network topology*, and not to perform a routing calculation involving network links that use signal compression, as well as network links that do not use signal compression.

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[1] *See, e.g.*, June 3, 2003 Amendment

The Examiner asserts that Gittens *et al.* discloses "multiple calculations for each traffic type with respect to links from sources to destination." Specifically, the Examiner asserts that Gittens *et al.* disclose a bandwidth manager for one type of data and a second bandwidth manager for a second type of data, and that disclosure allegedly supports multiple route calculations. As support, the Examiner cites col. 4, lines 1-62 and claim 37 of Gittens *et al. See* February 19, 2004 Non-Final Office Action, pg. 4. However, the Examiner is mischaracterizing the disclosure of Gittens *et al.* At col. 4, lines 1-62, Gittens *et al.* disclose that a first type of traffic and a second type of traffic, generated at the user's site, are multiplexed for transmission over the link at the user's end of the link, and are demultiplexed at the receiving end. Claim 37 is consistent, in that two bandwidth managers are disclosed, and one bandwidth manager compresses the data for transmission and the second bandwidth manager decompresses the transmitted data. There is no disclosure of multiple routing calculations based upon whether a link uses signal compression or does not use signal compression.

Furthermore, the Examiner alleges that Gittens *et al.* disclose "at least one link uses signal compression (compressing voice data via bandwidth managing device that analyzes data to be transmitted and provides a level of compression that is dependent upon the type of data being transmitted) and the remaining links do not use signal compression (non-voice data without compression)." As noted above, there is no disclosure in Gittens *et al.* of a route calculation and route selection based upon whether the signal links use signal compression or do not use signal compression. Referring to Figure 4 of Gittens *et al.*, the only link that is uses signal compression is the link 50 between the access bandwidth manager 46 and the

complementary access bandwidth manager 51. Gittens *et al.* lacks any disclosure that the dedicated switching network 49 has links that use signal compression or do not use signal compression.

In the combination of Lee and Gittens *et al.*, there still exists the fundamental deficiency that route selection does not account for the presence of network links that use signal compression and links that do not use signal compression. Assuming *arguendo* that Gittens *et al.*'s bandwidth access managers were incorporated in the network of Lee, the combination still lacks any teaching or suggestion that the route calculations somehow take into account whether a link uses signal compression or does not use signal compression. The fact that Gittens *et al.* discloses an access bandwidth manager that compresses signals is immaterial, and Gittens *et al.* completely lacks any disclosure of route calculations based on whether or not a link uses signal compression. Gittens *et al.* only discloses a single route that uses signal compression, *i.e.*, the route between an access bandwidth manager 46 and its complement. Moreover, Gittens *et al.* is directed to the features of the access bandwidth manager, and lacks any discussion of routing signals through the dedicated switching network 49. As discussed above, neither Lee nor Gittens *et al.* takes into account if network link uses signal compression when calculating routes through a network, as recited in claims 1 and 10.

Furthermore, with respect to claim 10, the combination of Lee and Gittens *et al.* does not disclose a first routing calculation using links that do not use signal compression. The signal compression performed by the access bandwidth manager of Gittens *et al.* compresses signals being output to its complementary access bandwidth manager. How can the access bandwidth

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manager/complementary access bandwidth manager pair provide a link with signal compression

for claim 1, and not provide a link with signal compression for claim 10? Applicants submit that

the Examiner cannot fulfill the "all limitations" prong of a *prima facie* case of obviousness, as

required by *In re Vaeck*, 20 U.S.P.Q.2d 1438, 1442 (Fed. Cir. 1991).

Since neither Lee nor Gittins *et al.* disclose the routing calculations dependent upon

whether a link uses signal compression or does not use signal compression, Applicants submit

that one of ordinary skill in the art would not be motivated to combine the two references. *In re*

Dembiczak, 175 F.3d 994, 999 (Fed. Cir. 1999) and *In re Zurko*, 258 F.3d 1379, 1386 (Fed. Cir.

2001) require the Examiner to provide particularized facts on the record as to why one of skill

would be motivated to combine the references. Without a motivation to combine, a rejection

based on a *prima facie* case of obviousness is improper. *In re Rouffet*, 149 F.3d 1350, 1357

(Fed. Cir. 1998)). The level of skill in the art cannot be relied upon to provide the suggestion to

combine references. *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308 (Fed. Cir. 1999). The

Examiner must make specific factual findings with respect to the motivation to combine

references. *In re Lee*, 277 F.3d 1338, 1342-44 (Fed. Cir. 2002). Although the Examiner

provides a motivation analysis with respect to saving bandwidth, Lee and Gittins *et al.* lack any

teaching about a network that has links that use signal compression and links that do not use

signal compression, and the desirability of making routing calculations that involve different

numbers of signal links that use signal compression. Applicants submit that the Examiner cannot

fulfill the motivation prong of a *prima facie* case of obviousness, as required by *In re Dembiczak*

and *In re Zurko*.

Based on the foregoing reasons, Applicants submit that the combination of Lee and

Gittins *et al.* fails to disclose all of the claimed elements as arranged in claims 1 and 10.

Therefore, the combination of Lee and Gittins *et al.* clearly cannot render the present invention

obvious as recited in claims 1 and 10. Thus, Applicants submit that claims 1 and 10 are

allowable, and further submit that claims 2-4 and 11-13 are allowable as well, at least by virtue

of their dependency from claims 1 and 10, respectively. Applicants respectfully request that the

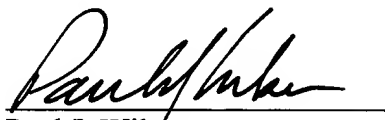Examiner withdraw the § 103(a) rejection of claims 1-4 and 10-13.

In view of the above, reconsideration and allowance of this application are now believed

to be in order, and such actions are hereby solicited. If any points remain in issue which the

Examiner feels may be best resolved through a personal or telephone interview, the Examiner is

kindly requested to contact the undersigned at the telephone number listed below.

AMENDMENT UNDER 37 C.F.R. § 1.111
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ATTORNEY DOCKET NO. Q55268

The USPTO is directed and authorized to charge all required fees, except for the Issue

Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any

overpayments to said Deposit Account.

Respectfully submitted,

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